AVAYA

Avaya Solution & Interoperability Test Lab

Application Notes for BBX Technologies Vuesion Multimedia Contact Center with Avaya IP Office 8.0 – Issue 1.0

Abstract

These Application Notes describe the configuration steps required for BBX Technologies Vuesion Multimedia Contact Center to interoperate with Avaya IP Office. In the compliance testing, BBX Technologies Vuesion Multimedia Contact Center provided skill based routing, announcements, and call reporting by using the SIP User, TAPI, and DevLink interfaces from Avaya IP Office 8.0.

Information in these Application Notes has been obtained through DevConnect compliance testing and additional technical discussions. Testing was conducted via the DevConnect Program at the Avaya Solution and Interoperability Test Lab.

RS; Reviewed:
SPOC 2/13/2012

Solution & Interoperability Test Lab Application Notes
©2012 Avaya Inc. All Rights Reserved.

1 of 44
IPO_8-Vuesion

1. Introduction

These Application Notes describe the configuration steps required for BBX Technologies Vuesion Multimedia Contact Center to interoperate with Avaya IP Office. In the compliance testing, BBX Technologies Vuesion Multimedia Contact Center provided skill based routing, announcements, and call reporting by using the SIP User, TAPI, and DevLink interfaces from Avaya IP Office.

The SIP User interface was used by Vuesion to register virtual SIP users and to route incoming calls via an available SIP user in a hunt group to the Vuesion server. The TAPI interface was used by Vuesion to monitor and control the virtual SIP and physical agent and supervisor users, and to provide call control via the agent and supervisor desktops. The DevLink interface was used by Vuesion to obtain real-time call events for call reporting purposes.

The BBX Technologies Vuesion Multimedia Contact Center consisted of the Vuesion Server, Vuesion Client, and Vuesion Reports software.

2. General Test Approach and Test Results

The feature test cases were performed both automatically and manually. Upon start of the BBX Technologies Vuesion Multimedia Contact Center application, the application automatically registers the virtual SIP users to Avaya IP Office.

For the manual part of the testing, incoming calls were made to the main hunt group. The Vuesion server used the TAPI event messages to track agent states, and specified calls to be redirected to available agents. Manual call controls from both the agent telephones and the agent desktops were exercised to verify remaining features such as answering and transferring of calls.

The verification of tests included using the Vuesion server logs for proper message exchanges, the Vuesion Client application for proper call controls, and the Vuesion Reports application for proper call reporting.

2.1. Interoperability Compliance Testing

The interoperability compliance test included feature and serviceability testing.

The feature testing focused on verifying the following on BBX Technologies Vuesion Multimedia Contact Center:

- Proper registration of virtual SIP users.

- Use of TAPI functions to monitor users and hunt groups, route incoming calls, support call control via agent desktops, set call forwarding and message waiting indicator (MWI).

- Proper handling of call scenarios including incoming calls to main hunt group, hold/reconnect, blind/attended transfer, drop, queue, park/unpark, coverage, call forwarding, supervisor monitor, outgoing call, account code, outpulse of DTMF digits, multiple agents, and simultaneous calls.

- Use of real-time DevLink events to monitor calls with proper reporting of calls.

The serviceability testing focused on verifying the ability of BBX Technologies Vuesion Multimedia Contact Center to recover from adverse conditions, such as disconnecting and reconnecting the Ethernet cables to the Vuesion server and to the Vuesion client.

2.2. Test Results

All test cases were executed and passed. The following were observations on BBX Technologies Vuesion Multimedia Contact Center from the compliance testing:

- Outgoing calls with account codes can only be placed via the phone, and the reported entry showed the first seven numeric digits in the account code with alphanumeric shown as blank.

- Inbound ACD calls that covered to the agent's voicemail do not show up in the reports.

- In the blind transfer scenario, two reporting entries were reported. The entry associated with the transfer-from agent included the duration of the call at the transfer-from agent, and the entry associated with the transfer-to agent included the duration of the entire call.

- In the attended transfer scenario, only one reporting entry was reported against the transfer-to agent and included the duration of the entire call. Also the transfer-to agent cannot release the call from the desktop. The desktop shows the call to be released however call is still active and can only be released from the phone.

- During an active call if the link goes down and after the recovery of the link between the Vuesion server and IP Office, the Vuesion client can no longer control the call via the desktop. The workaround is to manually control the call via the phone. However after the first manual control from the phone, agent can once again control the call via the desktop. If the link goes down at the same instant as a call is presented to the agent, then after recovery, incoming call is still shown and agent has no control on the desktop. Agent has to manually refresh to get control back of the desktop.

- This release does not support the conference feature.

2.3. Support

Technical support on BBX Technologies Vuesion Multimedia Contact Center can be obtained through the following:

- **Phone:**   (800) 930-4229, option 4
- **Email:**   bbxservice@bbxtech.com
- **Web:**   www.bbxtech.com

3. Reference Configuration

The configuration used for the compliance testing is shown below. The Avaya IP Office Voicemail Pro was used for the voicemail call scenarios.

In the compliance testing, the Vuesion Manager, Vuesion Reports and Vuesion Client software were running on the Vuesion server, while another Vuesion Client was running on the server that was hosting the Avaya IP Office Manager.
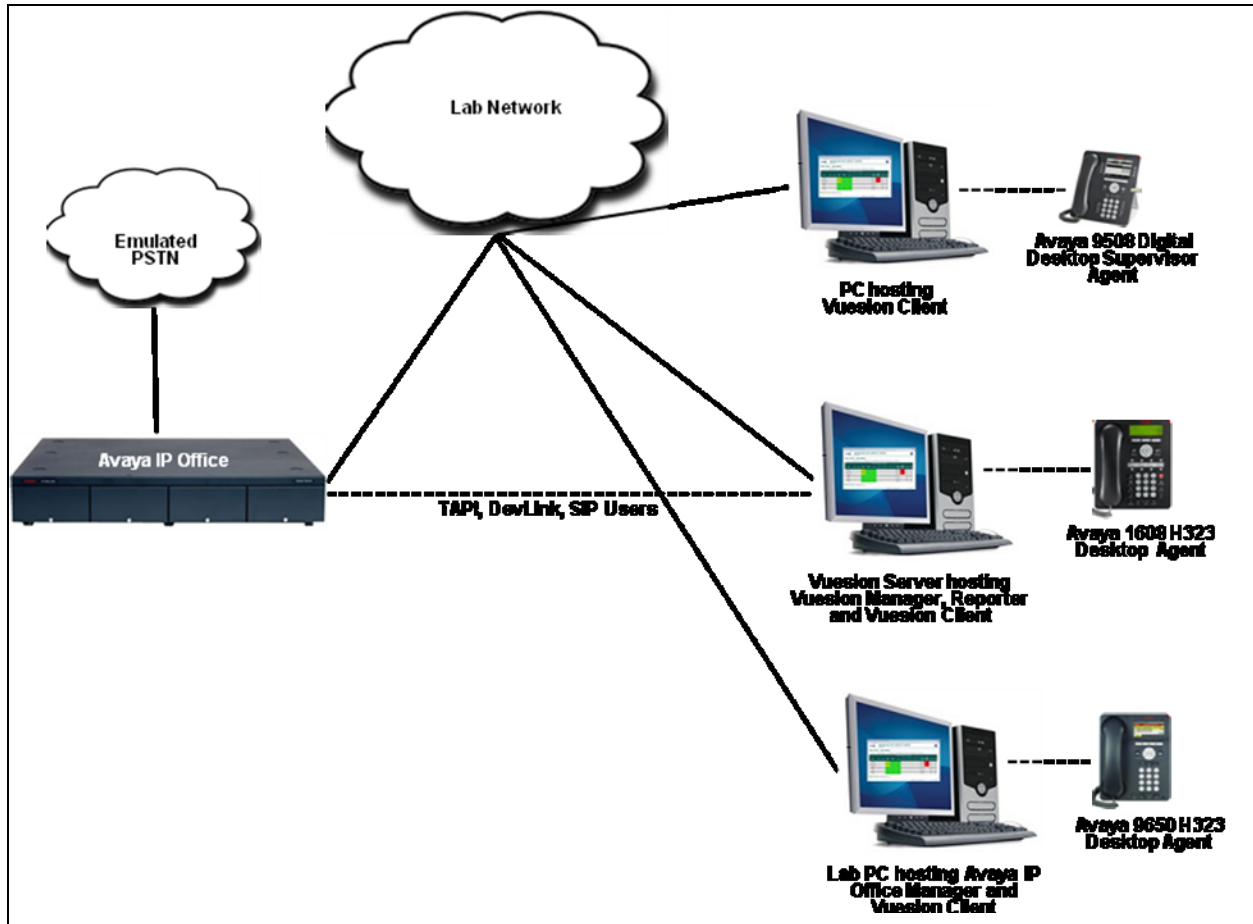
4. Equipment and Software Validated

The following equipment and software were used for the sample configuration provided:

Equipment	Software
Avaya IP Office 500	8.0 (13)
Avaya IP Office Manager	8.0 (13)
Avaya 9650 IP Telephone (H.323)	3.186a
Avaya 1608 IP Telephone (H.323)	1.300B
Avaya 9508 Digital Telephone	N/A
BBX Technologies Vuesion Server on Windows 2008 Server R2 Standard • Vuesion Reports • Avaya TAPI (tspi2w.tsp) • Avaya DevLink (devlink.dll)	V7.00 Revision 13 1.0.0.35 1.0.0.5
BBX Technologies Vuesion Client	V7.00

5. Configure Avaya IP Office

This section provides the procedures for configuring Avaya IP Office. The procedures include the following areas:

- Verify IP Office license
- Obtain LAN IP address
- Administer SIP Registrar
- Administer SIP extensions
- Administer SIP users
- Administer hunt groups
- Administer agents
- Administer supervisors
- Administer incoming call route
- Administer short code

5.1. Verify IP Office License

From a PC running the Avaya IP Office Manager application, select **Start > Programs > IP Office > Manager** to launch the Manager application. Select the proper IP Office system, and log in with the appropriate credentials.

The **Avaya IP R8 Office Manager** screen is displayed. From the configuration tree in the left pane, select **License > 3rd Party IP End-points** to display the **3rd Party IP End-points** screen in the right pane. Verify that the **License Status** is "Valid".

Scroll down the left pane and select **License > CTI Link Pro**, to display the **CTI Link Pro** screen in the right pane. Verify that the **License Status** is "Valid".

5.2. Obtain LAN IP Address

From the configuration tree in the left pane, select **System** to display the **IP500-DevCon** screen in the right pane. Select the **LAN1** tab, followed by the **LAN Settings** sub-tab in the right pane. Make a note of the **IP Address**, which will be used later to configure Vuesion. Note that IP Office can support SIP on the LAN1 and/or LAN2 interfaces, and the compliance testing used the LAN1 interface.

5.3. Administer SIP Registrar

Select the **VoIP** sub-tab. Make certain that **SIP Registrar Enable** is checked, as shown below.
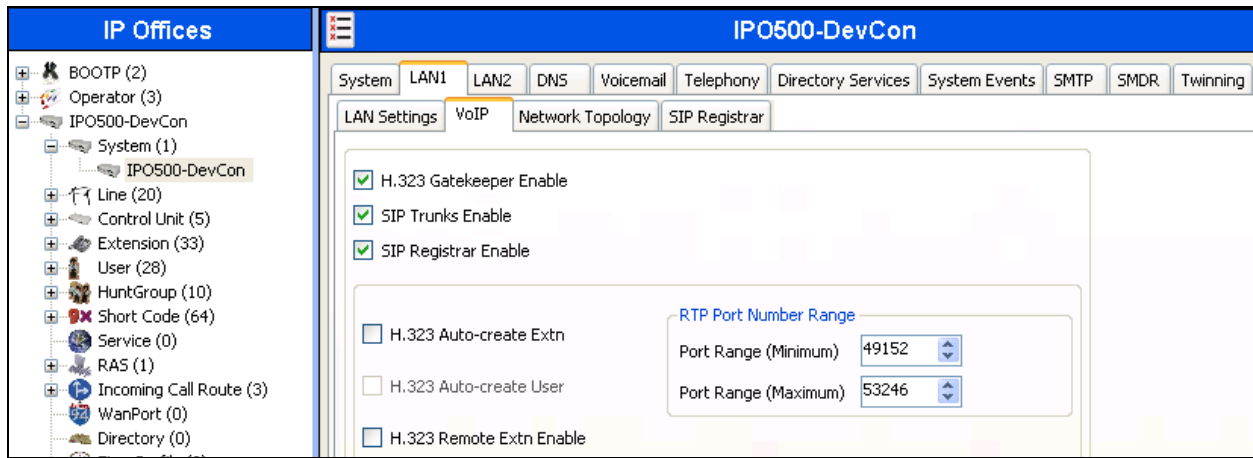
Select the **SIP Registrar** sub-tab, and enter a valid **Domain Name** for SIP endpoints to use for registration with IP Office. In the compliance testing, the **Domain Name** was left blank, so the LAN IP address was used for registration.
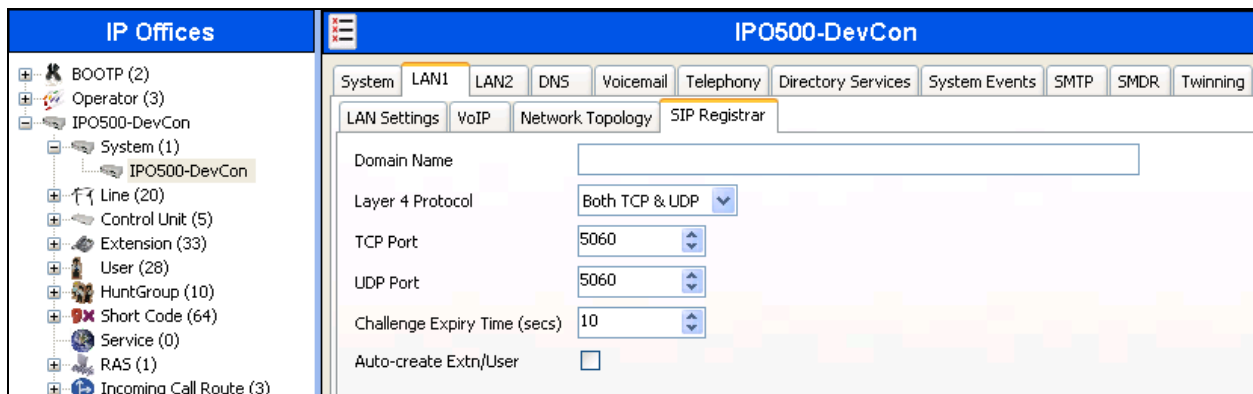
5.4. Administer SIP Extensions

From the configuration tree in the left pane, right-click on **Extension**, and select **New > SIP Extension** from the pop-up list to add a new SIP extension. Enter the desired digits for **Base Extension**, and retain the default values in the remaining fields. Figure below shows the added SIP extension.

Select the **VoIP** tab. Uncheck **Re-invite Supported**, and check **Use Offerer's Preferred Codec** and **Reserve 3rd party IP endpoint license**, as shown below. Retain the default values in the remaining fields.

Repeat this section to add the desired number of SIP extensions. In the compliance testing, four SIP extensions with base extensions of 28000-28003 were created.

5.5. Administer SIP Users

From the configuration tree in the left pane, right-click on **User**, and select **New** from the pop-up list. For **Name** and **Full Name**, enter the same desired value prefixed with "IVR", as required by Vuesion. For **Extension**, enter the first SIP base extension from **Section 5.4**. Figure below shows the added SIP user.

Select the **Voicemail** tab, and uncheck **Voicemail On**, as shown below.

RS; Reviewed:
SPOC 2/13/2012

Solution & Interoperability Test Lab Application Notes
©2012 Avaya Inc. All Rights Reserved.

11 of 44
IPO_8-Vuesion

Select the **Telephony** tab, followed by the **Supervisor Settings** sub-tab. Enter a desired **Login Code**.

Repeat this section to add a new user for each SIP extension from **Section 5.4**. In the compliance testing, four users with extensions of 28000-28003 were created.

Solution & Interoperability Test Lab Application Notes
©2012 Avaya Inc. All Rights Reserved.

5.6. Administer Hunt Groups

Administer three hunt groups for the following purposes:

- Main hunt group for delivering of incoming trunk calls to Vuesion.
- Monitor hunt group for supervisor monitoring of agents.
- Transfer hunt group for use by Vuesion for internal transfers.

5.6.1. Administer Main Hunt Group

From the configuration tree in the left pane, right-click on **HuntGroup** and select **New** from the pop-up list to add a new hunt group. This hunt group will be used to deliver incoming trunk calls to Vuesion.

Enter desired values for **Name** and **Extension**. For **Ring Mode**, select "Rotary" from the drop-down list. Retain the default values in the remaining fields

In the **User List** section, add the desired number of virtual SIP users from **Section 5.5** as members. In the compliance testing, 28000 and 28001 were added as members as shown below.

Select the **Voicemail** tab, and uncheck **Voicemail On**.

Select the **Queuing** tab, and uncheck **Queuing On**.

5.6.2. Administer Monitor Hunt Group

From the configuration tree in the left pane, right-click on **HuntGroup** and select **New** from the pop-up list to add a new hunt group. This hunt group will be used for supervisor monitoring of agents.

Enter desired values for **Name** and **Extension**, and retain the default values in the remaining fields.

In the **User List** section, add the agent users as members. In the compliance testing, 28004 and 28005 were added as members as shown below.

5.6.3. Administer Transfer Hunt Group

From the configuration tree in the left pane, right-click on **HuntGroup** and select **New** from the pop-up list to add a new hunt group. This hunt group will be used by Vuesion for internal transfers.

Enter desired values for **Name** and **Extension**, and retain the default values in the remaining fields.

In the **User List** section, add the desired number of virtual SIP users from **Section 5.5** as members. In the compliance testing, 28000 to 28003 were added as members as shown below.

Follow the procedures in **Section 5.6.1** to uncheck **Voicemail On** and **Queuing On**.

5.7. Administer Agents

From the configuration tree in the left pane, select the first agent user, in this case "28004".

Select the **Telephony** tab, followed by the **Supervisor Settings** sub-tab. Uncheck **Cannot be Intruded**, as shown below.

Repeat this section for all agent users. In the compliance testing, two agent users with extensions 28004 and 28005 were configured.

5.8. Administer Supervisors

From the configuration tree in the left pane, select the first supervisor user that will be monitoring agents, in this case "201".

Select the **Telephony** tab, followed by the **Supervisor Settings** sub-tab. For **Monitor Group**, select the Monitor hunt group from **Section 5.6.2**. Check **Can Intrude** and **Cannot be Intruded**.

Repeat this section for all supervisors that will be monitoring agents. In the compliance testing, one supervisor user with extension 201 was configured, as shown below.

RS; Reviewed:
SPOC 2/13/2012

Solution & Interoperability Test Lab Application Notes
©2012 Avaya Inc. All Rights Reserved.

18 of 44
IPO_8-Vuesion

5.9. Administer Incoming Call Route

If necessary, create an incoming call route to route incoming calls to the Main hunt group. In the compliance testing, a SIP line "17" was created for incoming route

As shown in the screen below, the **Line Group ID** of "17" is selected.

In the **Destinations** tab, the use of "." in the **Destination** field enables the routing to reach all extensions in the IP Office.

If desired, the Main hunt group can be selected from the **Destination** drop-down to route all incoming trunk calls to Vuesion.

5.10. Administer Short Code

From the configuration tree in the left pane, right-click on **Short Code** and select **New** from the pop-up list to add a new short code for Call Listen. Configure the fields as shown below in the right pane.

Note that the short code has to be "*8", as required by Vuesion during compliance testing. This short code will be used by the Vuesion server to support supervisor monitoring of agents.

6. Configure BBX Technologies Vuesion Multimedia Contact Center

This section provides the procedures for configuring the Vuesion server. The procedures include the following areas:

- Administer TAPI driver
- Administer Switch.txt
- Stop service
- Launch Vuesion Manager
- Administer communication settings
- Administer local extensions
- Administer tenants
- Administer VMAIL extensions
- Administer queues sizing
- Administer ACD members
- Administer ACD groups
- Administer trunks
- Start service

The configuration of the Vuesion server is typically performed by BBX Technologies technicians. The procedural steps are presented in these Application Notes for informational purposes.

In addition to the shown procedural steps, the application also requires the auto attendant, and the class of service for the agents and supervisors be configured by following reference [2].

6.1. Administer TAPI Driver

From the Vuesion server, select **Start > Control Panel**, and click on the **Phone and Modem** icon (not shown below). In the **Phone and Modem Options** screen, select the **Advanced** tab. Select the **Avaya IP Office TAPI2 Service Provider** entry, and click **Configure**.
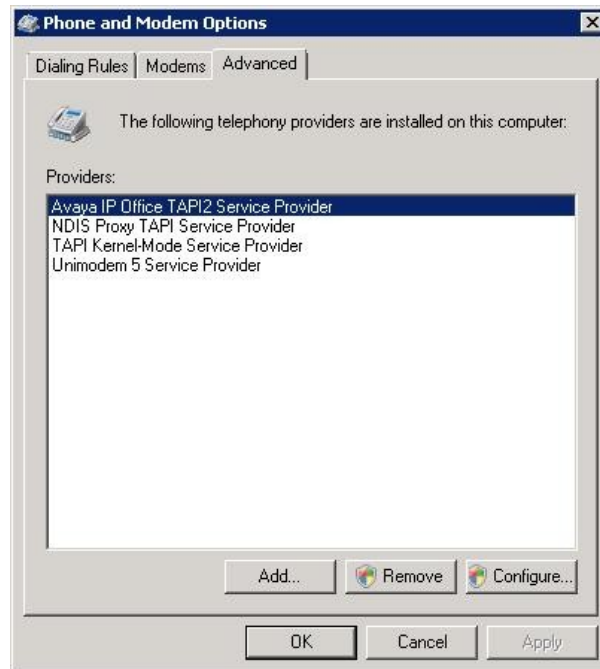

The **Avaya TAPI2 configuration** screen is displayed**.** For **Switch IP Address**, enter the IP address of Avaya IP Office. Select the radio button for **Third Party**, and enter the IP Office password into the **Switch Password** field. Reboot the Vuesion server.
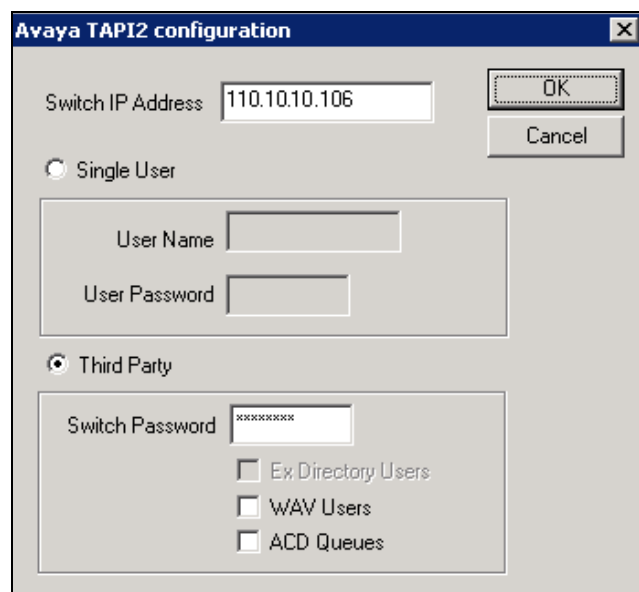
6.2. Administer Switch.txt

Navigate to the **C:\Program Files\BBX Technologies\Vuesion Server_C** directory to locate the **Switch** text file shown below.
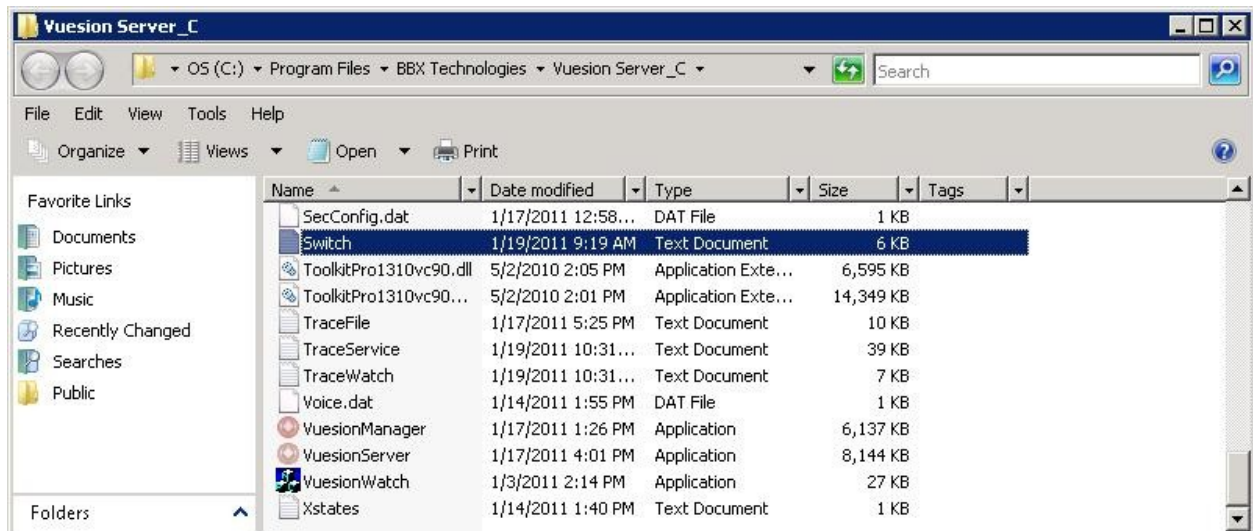

Open the **Switch** text file with the NotePad application. For **SIPPROXYADDRESS**, enter the IP address of IP Office from **Section 5.2**. For **SIPPROXYPORT**, enter the UDP port number from **Section 5.3**. For **SIPMYIPADDRESS**, enter the IP address of the local Ethernet interface used for connectivity with IP Office, in this case "110.10.10.104".
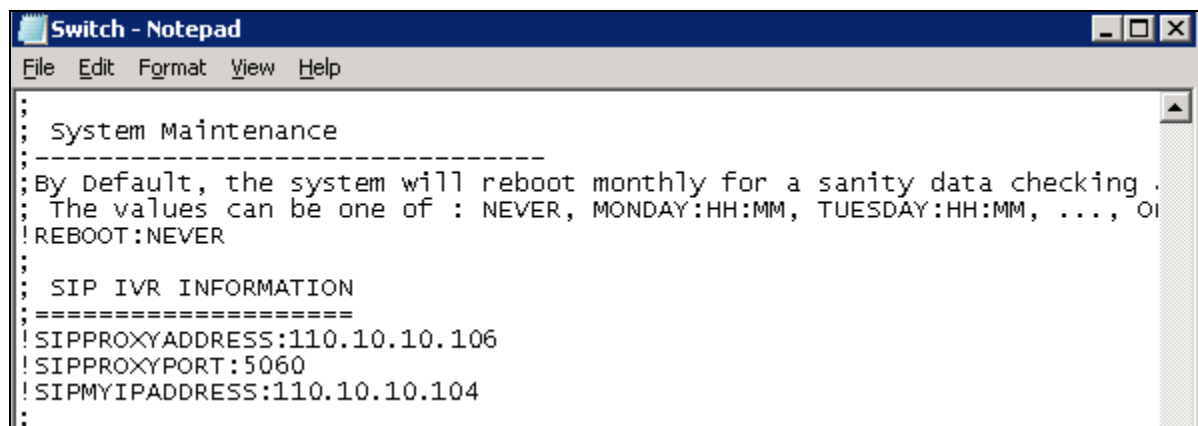
6.3. Stop Service

Select **Start > Control Panel > Administrative Tools > Services**, to display the **Services** screen. Navigate to the **Vuesion ServerC** entry, right-click on the entry and select **Stop**.
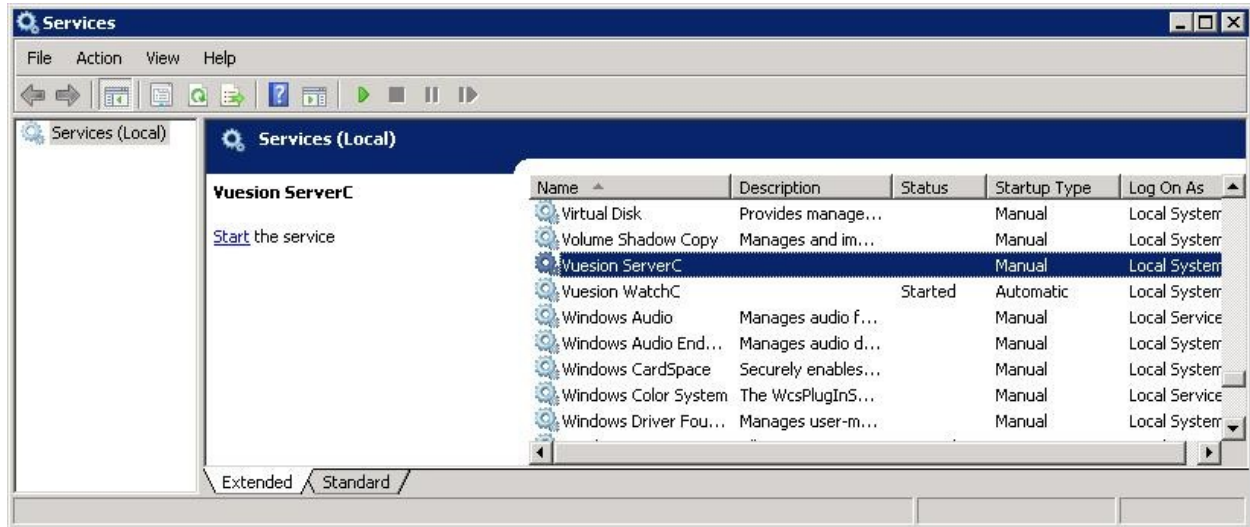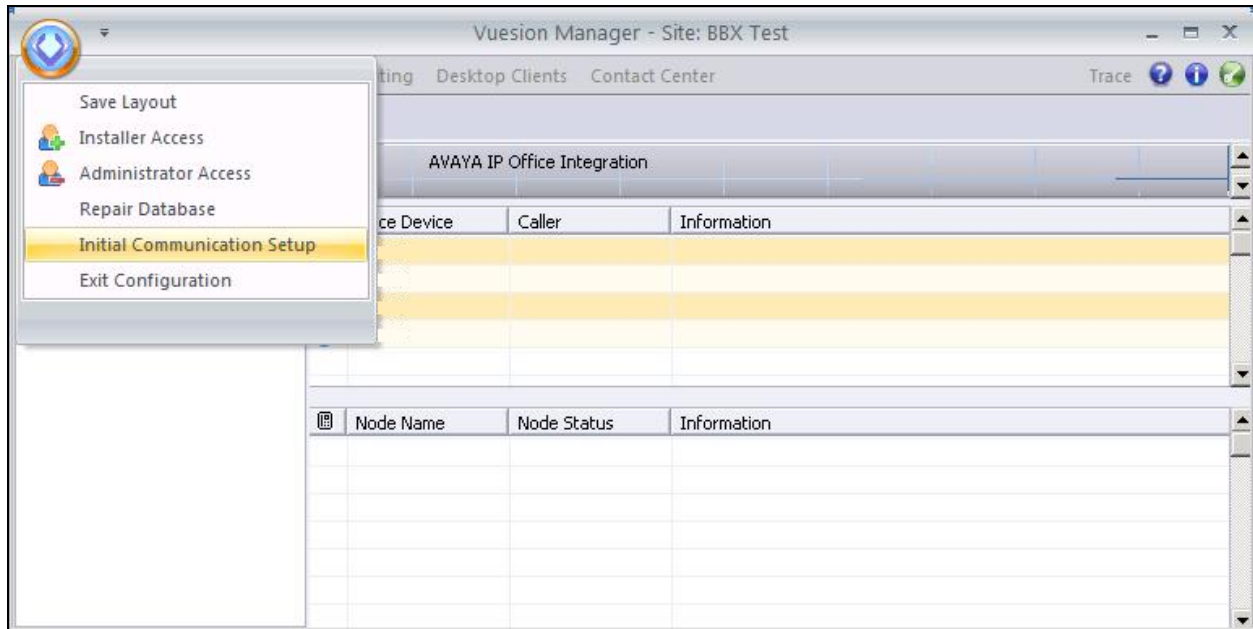

6.4. Launch Vuesion Manager

From the Vuesion server, double-click the **VuesionManager** icon shown on the desktop, which was created as part of installation.

6.5. Administer Communication Settings

The **Vuesion Manager** screen is displayed. Click on the icon in the top left corner, and select **Initial Communication Setup** from the drop-down list.

The **VuesionServer** dialog box is displayed, click **OK**

RS; Reviewed:
SPOC 2/13/2012
Solution & Interoperability Test Lab Application Notes
©2012 Avaya Inc. All Rights Reserved.
25 of 44
IPO_8-Vuesion

The **COMMUNICATION SETTINGS** screen is displayed next. Check **IP Enabled**. Enter the IP address and password for IP Office in **PBX IP Addr** and **PBX Password**, and retain the default values in the remaining fields.

6.6. Administer Local Extensions

The **Vuesion Manager** screen is displayed again. Select **Switch Setup > Local Extensions** from the left pane.

The **DIRECTORY CONFIGURATION** screen is displayed. Follow reference [2] to create an entry for each agent user from **Section 5.7**, each supervisor user from **Section 5.8**, and for the Transfer hunt group from **Section 5.6.3**, as shown below.

Update the **Full Name** field as desired, and retain the default values in the remaining fields. Note that the port numbers are automatically assigned by the system subsequently.

6.7. Administer Tenants

From the **Vuesion Manager** screen, select **Messaging/IVR > Tenants** from the left pane.

The **TENANTS/GROUPS** screen is displayed. Follow reference [2] to create an entry for the Main hunt group from **Section 5.6.1**, as shown below.

For **Name**, enter the Main hunt group name from **Section 5.6.1**. For **ID** and **Password**, enter the Main hunt group extension from **Section 5.6.1**. Retain the default values in the remaining fields, and click **Edit Members**.
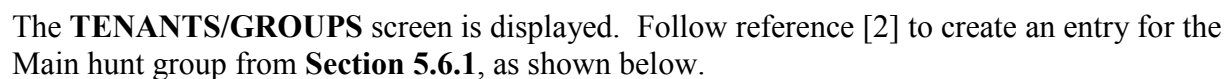
The **Selected Tenant** screen is displayed. Select the applicable entries in the **Available User List** section, and click the double-left-arrow to move the entries to the **Tenant/Group Members List** section, as shown below. In this case, all entries were selected.
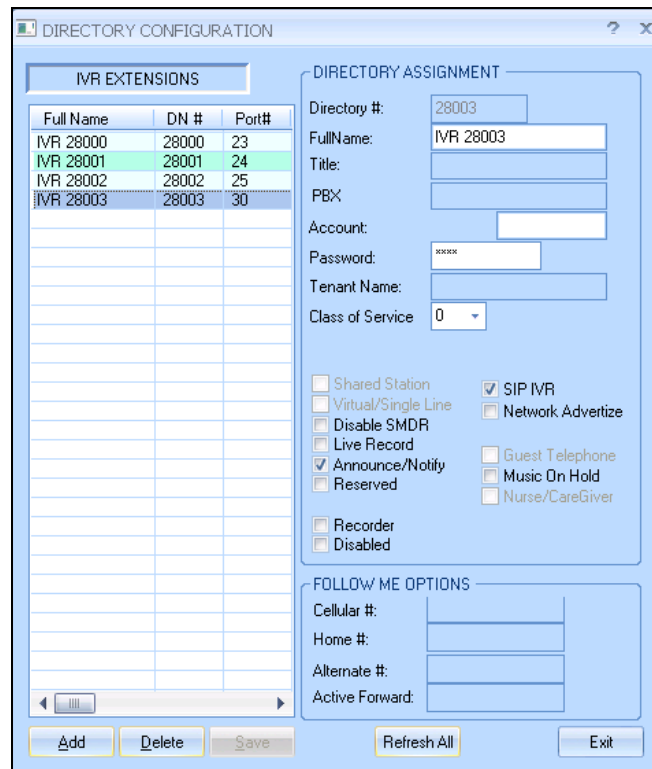
Selected Tenant : BBX Main				X
Tenant/Group Members List		**Available Users List**		
Member Name	Member Ext	Member Name	Member Ext	
Customer Support	77300			
Extn201 9508D	201			
Extn28004 9608	28004			
Extn28005 9608	28005			

<<--
-->>

Save   Cancel

6.8. Administer VMAIL Extensions

From the **Vuesion Manager** screen, select **Messaging/IVR > VMAIL Extensions** from the left pane.
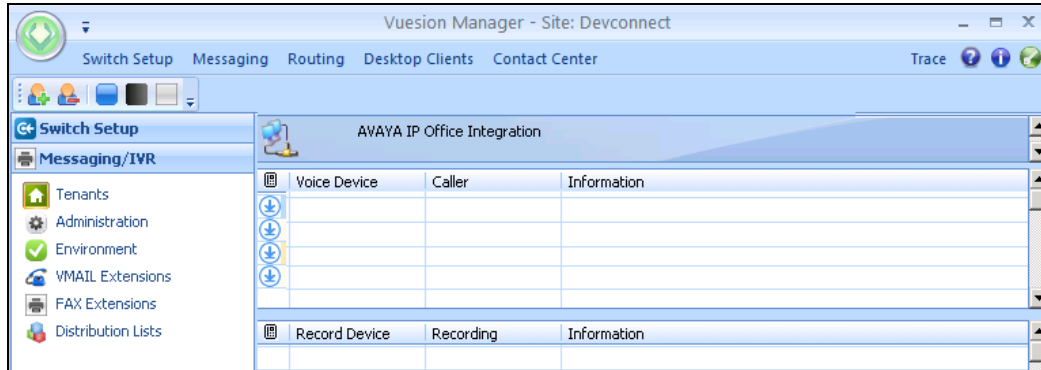
The **DIRECTORY CONFIGURATION** screen is displayed. Follow reference [2] to create an entry for each virtual SIP user from **Section 5.5**, as shown below.

For **Full Name**, enter the SIP user name from **Section 5.5**. For **Password**, enter the SIP user login code from **Section 5.5**. Check **SIP**. Check **Announce/Notify** to all of the virtual SIP users, in this case users 28000 and 28003. Note that the port numbers are automatically assigned by the system subsequently.

RS; Reviewed:
SPOC 2/13/2012
Solution & Interoperability Test Lab Application Notes
©2012 Avaya Inc. All Rights Reserved.
30 of 44
IPO_8-Vuesion

6.9. Administer Queues Sizing

From the **Vuesion Manager** screen, select **Contact Center > Queues Sizing** from the left pane.
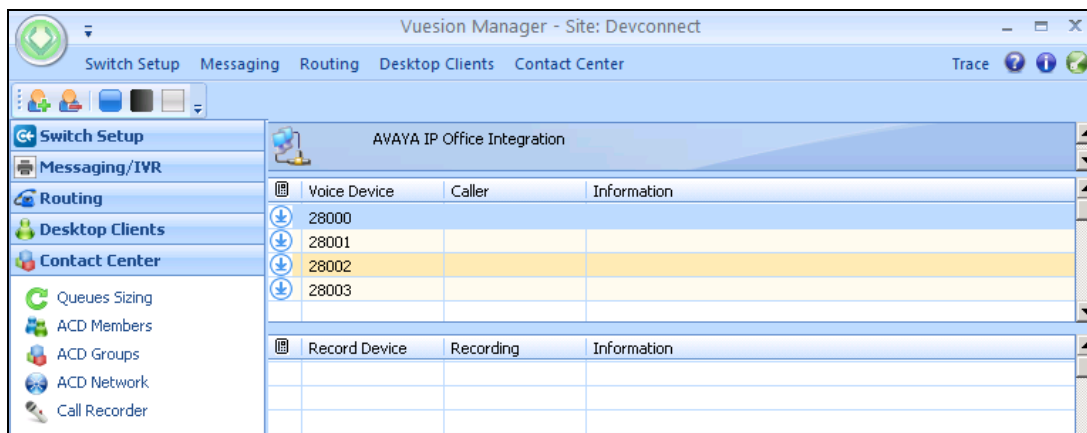
The **DIRECTORY CONFIGURATION** screen is displayed. Follow reference [2] to create the desired number of entries for queuing of incoming ACD calls, as shown below.

The **DN #** are used by Vuesion to park and unpark the queued calls on IP Office, therefore use available extension numbers on IP Office.

6.10. Administer ACD Members

From the **Vuesion Manager** screen shown in **Section 6.9**, select **Contact Center > ACD Members** from the left pane.

The **ACD Members** screen is displayed. Follow reference [2] to create an entry for each agent user from **Section 5.7**, and for each supervisor user from **Section 5.8**, as shown below.

Enter the desired **FullName**. For **Member ID**, enter a unique value for each agent and supervisor. The recommendation is to use available extension numbers on IP Office. For **Password**, enter desired values. In the compliance testing, the same values are used for member ID and password for simplicity.

For **Type**, select "ACD Agent" for agents and "ACD Supervisor" for supervisors. For **Primary Group**, select the Transfer hunt group name from **Section 6.6**. For **Class**, select the appropriate class of service.

6.11. Administer ACD Groups

From the **Vuesion Manager** screen shown in **Section 6.9**, select **Switch Setup > ACD Groups** from the left pane, to display the **SkillSets Administration** screen. Follow reference [2] to create an entry for the Transfer hunt group from **Section 6.6**, as shown below.

The **Voice Routing Options** section defines the parameters used for routing of ACD calls. The **Multimedia Contact Center Members Assignment** section defines the members and their skills level. The **Announcements** section defines the announcement treatments.

The screenshot below shows the values used in the compliance testing.

6.12. Administer Trunks

From the **Vuesion Manager** screen shown in **Section 6.96**, select **Switch Setup > Trunks** from the left pane, to display the **DIRECTORY CONFIGURATION** screen. Follow reference [2] to create sufficient entries for the SIP line from **Section 5.9**, as shown below.

For **Directory #**, use the value "xy", where "x" is the line number and "y" is the channel number specified in two-digits. In this case, the line number is "1", since Vuesion uses this for SIP line and the channel numbers are "01-23". Retain the default values in the remaining fields.

The screenshot below shows the values used in the compliance test.

Solution & Interoperability Test Lab Application Notes
©2012 Avaya Inc. All Rights Reserved.

6.13. Start Service

Select **Start > Control Panel > Administrative Tools > Services,** to display the **Services** screen. Navigate to the **Vuesion ServerC** entry, right-click on the entry and select **Start**.

7. Verification Steps
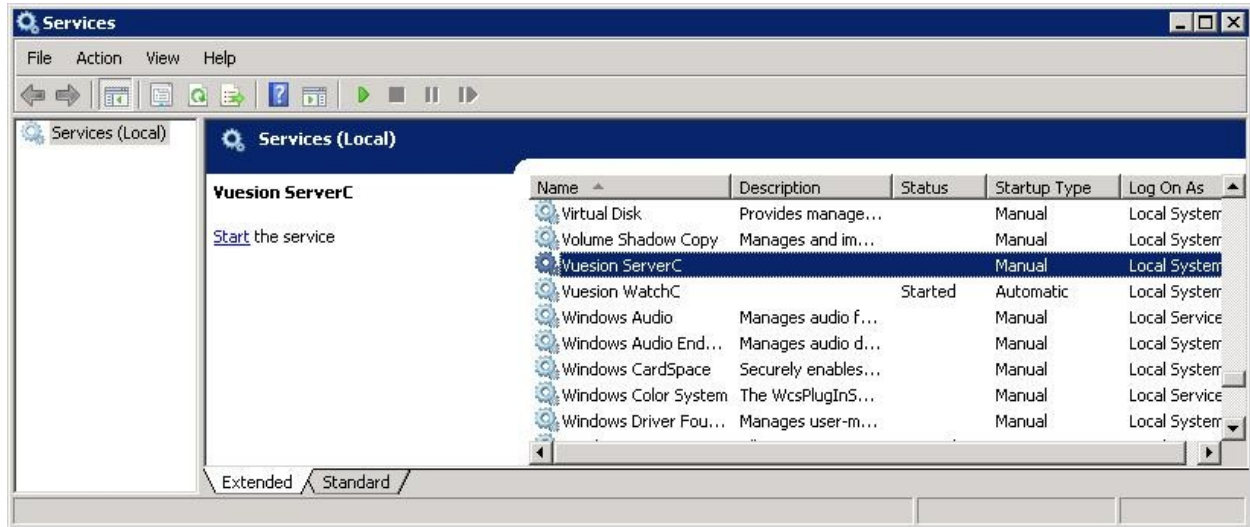
This section provides the tests that can be performed to verify proper configuration of Avaya IP Office and BBX Technologies Vuesion Multimedia Contact Center.

7.1. Verify Avaya IP Office

From a PC running the Avaya IP Office Monitor application, select **Start > Programs > IP Office > Monitor** to launch the application. The **Avaya IP Office R8 SysMonitor** screen is displayed, as shown below. Select **Status > SIP Phone Status** from the top menu.
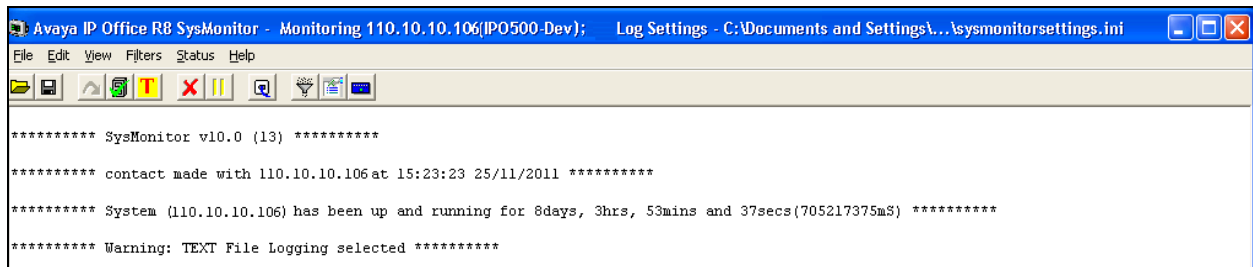
The **SIPPhoneStatus** screen is displayed. Verify that there is an entry for each virtual SIP user from **Section 5.5**, that the **User Agent** contains "Vuesion(R)SIP", and that the **Status** is "SIP: Registered", as shown below.
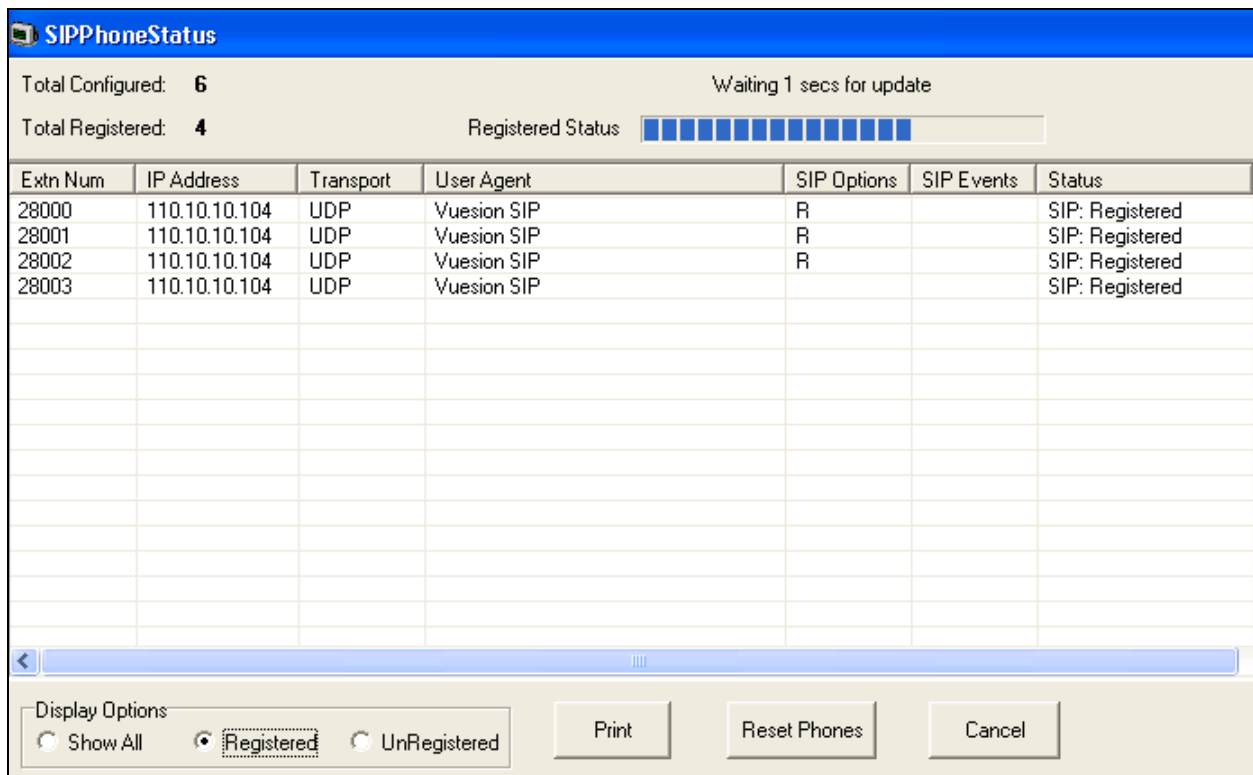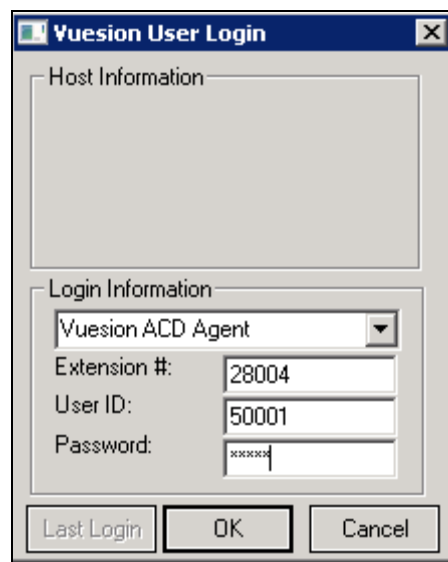
7.2. Verify BBX Technologies Vuesion Multimedia Contact Center

From the agent user PC running Vuesion Client, double-click on the **VuesionClient** icon shown on the desktop, which was created as part of installation.
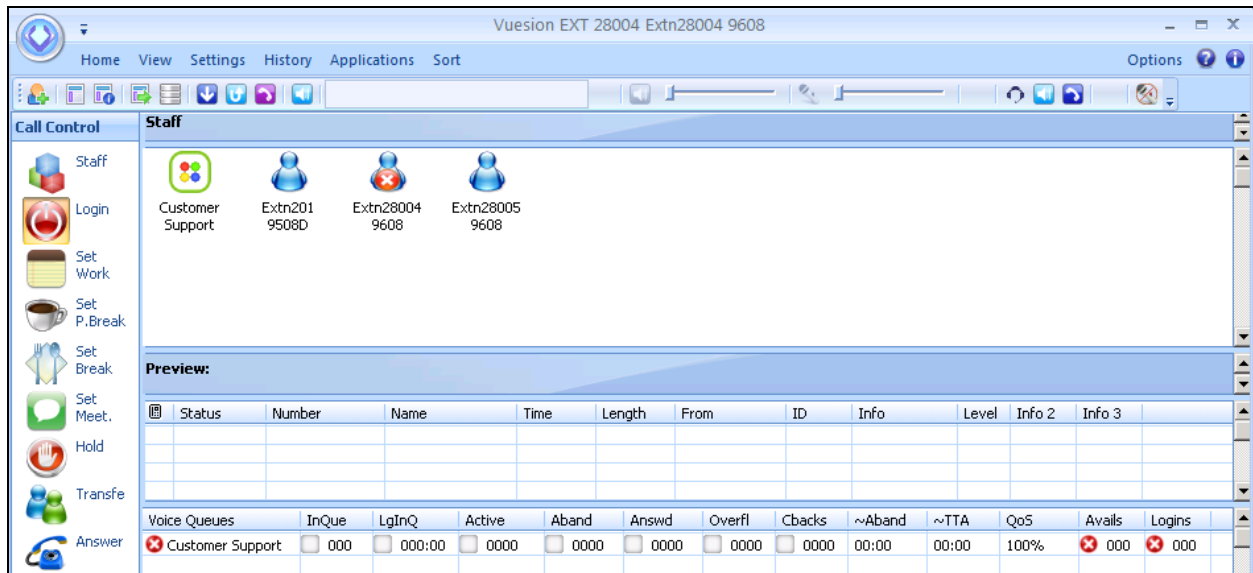

The **Vuesion User Login** screen is displayed. For **Login Information**, select "Vuesion ACD Agent" from the drop-down list.

For **Extension #**, enter the extension number of the first agent user from **Section 6.6**. For **User ID** and **Password**, enter the corresponding credentials for the first agent user from **Section 6.10**, as shown below. During compliance testing one of the client was run from the Vuesion server and the Figure below shows that client.

The **Vuesion** screen is displayed. Click on the **Login** icon from the left pane.
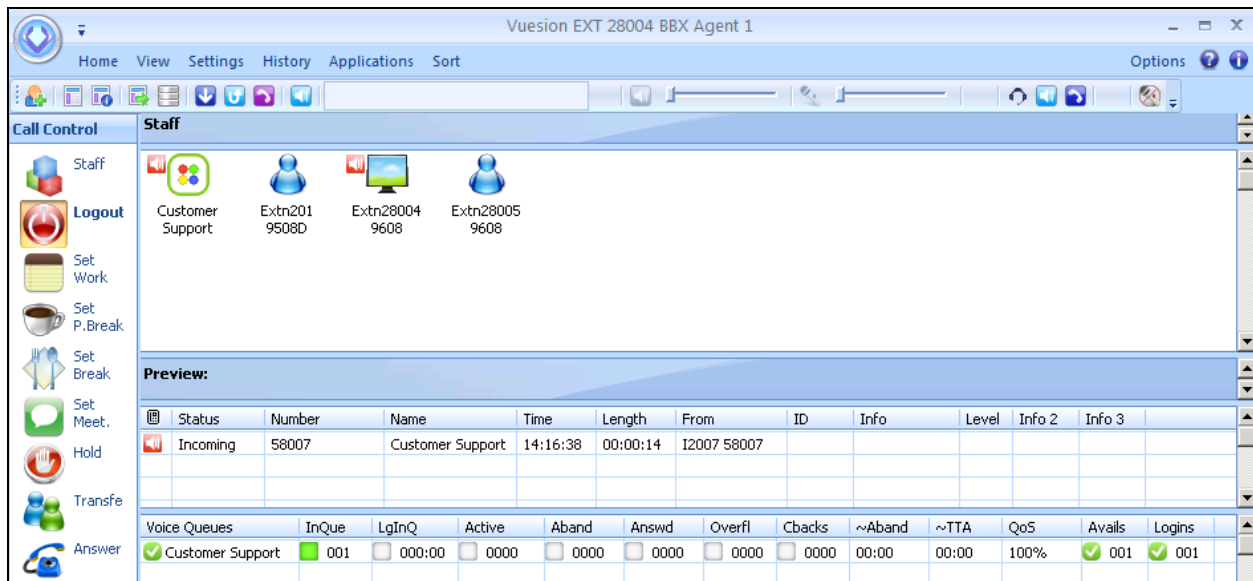

The screen is updated in the right pane, as shown below.
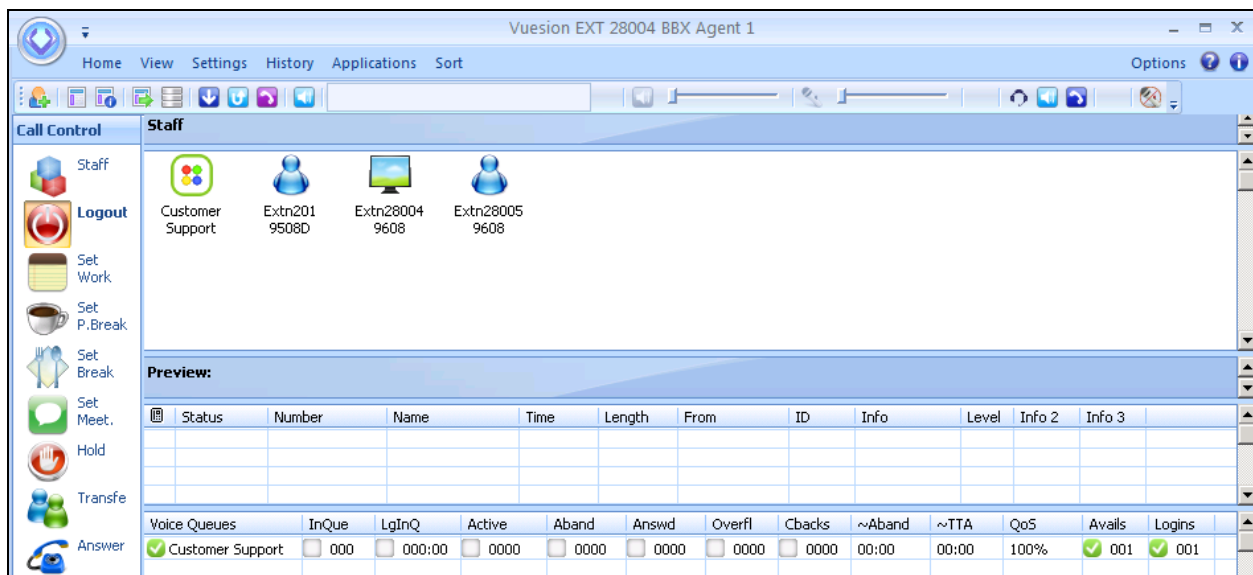
Make an incoming trunk call to the Main hunt group, and verify that the screen is updated to reflect a ringing call. Also verify that the entry shown in the **Preview** pane reflects the proper information for the call.

Click on the **Answer** icon in the left pane to answer the call.

Verify the agent's telephone is connected to the caller, and that the agent screen is updated to show the call being connected, as shown below. Click on the **Release** icon to complete the call.
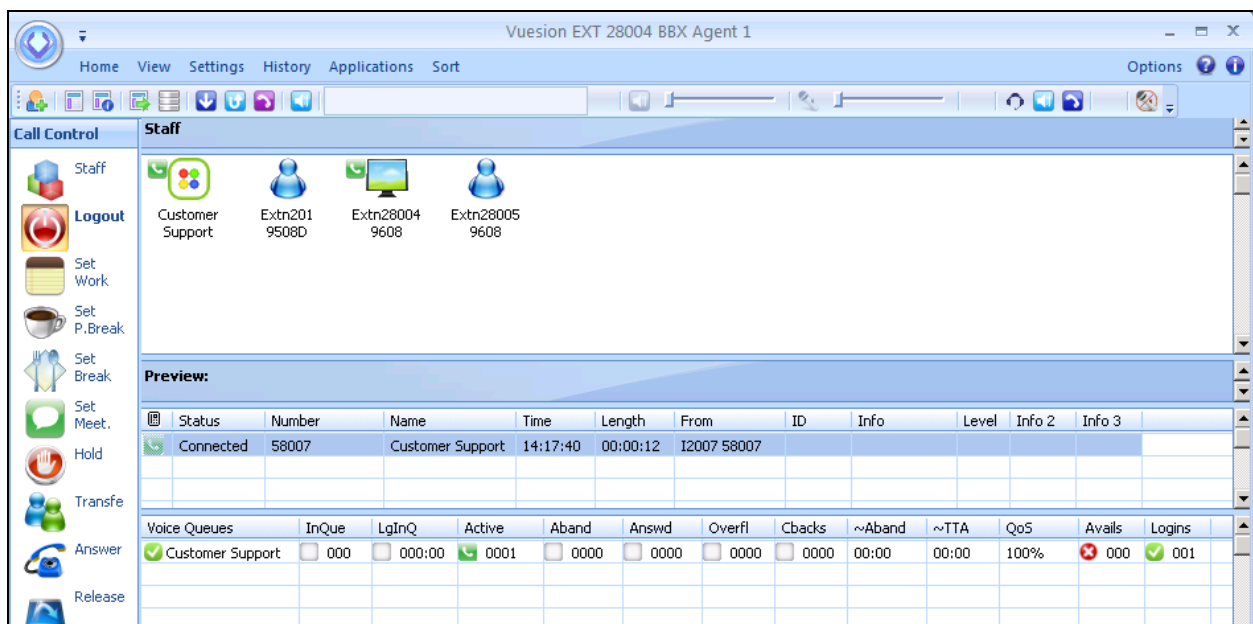
From the PC running Vuesion Reports, double-click on the **VuesionReports** icon shown on the desktop, which was created as part of installation. In the compliance testing, Vuesion Reports was running on the Vuesion server.

The **Vuesion Reports Login** screen is displayed. For **Server IP/Name**, enter the IP address of the Ethernet interface on the Vuesion server used for connectivity with clients, in this case "110.10.10.104". For **TCP/Port**, enter "60029". For **Which Reports**, select "Current Reports" from the drop-down list.

For **Supervisor ID** and **Password**, enter the corresponding credentials for the supervisor from **Section 6.10**, as shown below.

The **Supervisor Login** screen is displayed. Retain the default values, and click **View Reports**.

The **Vuesion CDR/ACD Reports** screen is displayed next. Select **Agents > Activity** from the left pane menu.

RS; Reviewed:
SPOC 2/13/2012
Solution & Interoperability Test Lab Application Notes
©2012 Avaya Inc. All Rights Reserved.
41 of 44
IPO_8-Vuesion

The **Vuesion CDR/ACD Reports** screen is updated with the **Agent Activity** report. Verify that there is an entry reflecting the last call with proper information, as shown below.

RS; Reviewed:
SPOC 2/13/2012

Solution & Interoperability Test Lab Application Notes
©2012 Avaya Inc. All Rights Reserved.

42 of 44
IPO_8-Vuesion

8. Conclusion

These Application Notes describe the configuration steps required for BBX Technologies Vuesion Multimedia Contact Center to successfully interoperate with Avaya IP Office. All feature and serviceability test cases were completed with observations noted in **Section 2.2**.

9. Additional References

This section references the product documentation relevant to these Application Notes.

1. *IP Office 8.0 Documentation CD,* December 2011, available at http://support.avaya.com.

2. *Vuesion Application Server Contact Center Configuration Guide*, available upon request to BBX Technologies Support.

RS; Reviewed:
SPOC 2/13/2012

Solution & Interoperability Test Lab Application Notes
©2012 Avaya Inc. All Rights Reserved.

43 of 44
IPO_8-Vuesion

©2012 Avaya Inc. All Rights Reserved.
Avaya and the Avaya Logo are trademarks of Avaya Inc. All trademarks identified by ® and ™ are registered trademarks or trademarks, respectively, of Avaya Inc. All other trademarks are the property of their respective owners. The information provided in these Application Notes is subject to change without notice. The configurations, technical data, and recommendations provided in these Application Notes are believed to be accurate and dependable, but are presented without express or implied warranty. Users are responsible for their application of any products specified in these Application Notes.

Please e-mail any questions or comments pertaining to these Application Notes along with the full title name and filename, located in the lower right corner, directly to the Avaya DevConnect Program at devconnect@avaya.com.